



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Trung T. Doan

Serial No.: 09/652,969

Filed: August 31, 2000

For: CHEMICAL DISPENSING SYSTEM FOR  
SEMICONDUCTOR WAFER PROCESSING

§  
§ Group Art Unit: 1763  
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§ Examiner: Sylvia R. MacArthur  
§  
§ Atty. Docket: 93-0421.05  
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RESPONSE TO THE OFFICE ACTION OF JANUARY 10, 2001

Commissioner for Patents  
Washington, D.C. 20231

Dear Sir:

Certificate of Mailing (37 C.F.R. § 1.8)	
I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, postage prepaid, in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231, on the date below:	
<u>7-10-01</u>	<u>Irish Roman-Haidor</u>
Date	Signature

Applicant herein responds to the Examiner's Office Action of January 10, 2001.

REMARKS

Claims 38-40 are pending.

Claims 38-40 are rejected.

Applicant requests reconsideration of the patentability of claims 38-40.

The Examiner rejected claim 38 and its dependent claims 39-40 as being obvious in light of either Iwata (U.S. Patent 4,611,553) or Uchida (Japanese Patent 54-73579) in combination with Milina (U.S. Patent 5,444,921). In doing so, the Examiner suggested that Iwata and Uchida disclose all limitations except for those concerning a nozzle's extended position and retracted position. Applicant contends that Iwata and Uchida fail to disclose additional claim limitations. Thus, the Examiner's misinterpretation of the coverage of Iwata and Uchida indicates a failure to meet the *prima facie* burden required for rejecting the claims. In addition, Milina's disclosure fails

to make up for the lapses in Iwata and Uchida, thereby indicating that the *prima facie* burden cannot be met. Further, Iwata and Uchida actually teach away from those additional limitations, thereby supporting the non-obviousness of these claims. Moreover, given the opposing teachings of the references, Applicant contends that one of ordinary skill in the art would be discouraged from attempting to combine these references. Applicant addresses the combinations of references separately below.

#### I. Rejection based on Iwata in combination with Milina

The Examiner acknowledged that Iwata failed to disclose the limitations concerning extended position and retracted position of claim 38's nozzle. Applicant contends, however, that there are additional limitations that Iwata fails to disclose. For example, claim 38's nozzle must be disposed toward a workpiece and be configured to dispense a chemical toward that workpiece. Iwata, on the other hand, offsets its arguably analogous jetting outlet so that it is disposed toward the interior of Iwata's suction nozzle. (Iwata at col. 2, ln. 44-63; Fig. 1; Fig. 3.) Accordingly, Iwata's jetting outlet is configured to dispense a chemical toward that interior rather than the workpiece. (*Id.*) Iwata requires this in order to achieve the "eddy stream" needed to clean Iwata's sucking inlet; to do otherwise risks clogging the sucking inlet. (See *Id.* at col. 3, ln. 1-5.) Thus, not only does Iwata fail to disclose claim 38's limitations specified above, Iwata teaches away from them, thereby supporting the non-obviousness of these claims. Further, if Milina is interpreted as disclosing this limitation, then Milina is in conflict with Iwata, thereby discouraging the combination of these two references.

maintain  
arg. teaches away  
Iwata be interpreted

The reasoning behind Iwata's offset jetting outlet also highlights one of several conflicts between Iwata and Milina which discourage their combination. Specifically, Iwata teaches that if there is not enough offset, the cleaning liquid may flow to the rear side of the workpiece and "foul" that area. (*Id.* at col. 2, ln. 59-61.) Milina, on the other hand, actively encourages dispensing cleaning liquid onto the rear side of its workpiece. (Milina at col. 1, ln. 58-66; Fig. 1; Fig. 4).

Another conflict between the references concerns the spacing between the dispenser and the workpiece. Milina's entire specification, and indeed Milina's invention itself, is premised on the notion that precise spacing between the dispenser and the workpiece is critical. Iwata, to the

contrary, indicates that any distance from 0.5 to 2.0 mm is acceptable. Thus, given Iwata's teachings, Milina's disclosure represents an unnecessary amount of time, money, effort, and complication of machinery to one of ordinary skill in the art. As a result, such an artisan would be discouraged from consulting Milina to modify the Iwata device.

Conversely, Iwata is quite focused on the notion of providing suction while dispensing, yet Milina, which addresses dispensing and is aware of suction technology (having used a vacuum chuck to hold the workpiece) chooses to avoid the time, money, effort, and complication of machinery involved with sucking the dispensed liquid. Instead, Milina content to allow the liquid to collect in a drain cup. Thus, Milina's implicit rejection of Iwata's technology provides further discouragement to their combination.

## II. Rejection based on Uchida in combination with Milina

The Examiner acknowledged that Uchida failed to disclose the limitations concerning extended position and retracted position of claim 38's nozzle. Applicant contends, however, that there are additional limitations that Uchida fails to disclose. For example, claim 38 requires that its suction applicator be configured operate at a distance from the workpiece. Uchida, on the other hand, requires that its suction nozzle be configured to directly contact the coated workpiece. (Uchida at Figure 3; new translation of Uchida at p. 3, ln. 37-38. Applicant notes that page 4 of the original translation expressed that the text corresponding to keying number 12 indicated a "surface" to be coated. However, a careful comparison of the four Japanese symbols associated with keying number 12 and the identical first four symbols associated with the 180-micron gap figure suggests that the translated phrases should also be identical. A consultation with Applicant's translator confirmed that both instances should refer to a "substance" to be coated. Applicant submitted the new translation in an Information Disclosure Statement -- mailed 12/15/00 and acknowledged as being reviewed by the Examiner -- and has included it in an Appendix to this Response.)

Uchida requires that its suction nozzle contact the coated workpiece in order to avoid "gumming up the suction port." (*Id.* at p. 4, ln. 12-17). Thus, not only does Uchida fail to disclose claim 38's limitation specified above, Uchida teaches away from it, thereby supporting the non-obviousness of these claims.

Primal analysis

Milina, by implicitly eschewing suction technology as applied to dispensing, cannot make up for Uchida's lack of disclosure and in fact teaches away from what is in Uchida's disclosure. This contrary teaching discourages one of ordinary skill in the art from combining these references. Moreover, Uchida's direct contact between its suction nozzle and its coated substrate highlight another contrary teaching between the references. By directly contacting the coated substrate, Uchida necessarily prevents cleaning liquid from reaching the rear side of the workpiece. Milina, to the contrary, actively encourages dispensing cleaning liquid onto the rear side of its workpiece. (Milina at col. 1, ln. 58-66; Fig. 1; Fig. 4).

### Conclusion

In light of the above remarks, Applicant submits that claims 38-40 are allowable over the applied references. Therefore, Applicant respectfully requests reconsideration of the Examiner's objections and rejections and further requests allowance of all of the pending claims. If there are any matters which may be resolved or clarified through a telephone interview, the Examiner is requested to contact Applicant's undersigned attorney at the number indicated.

Respectfully submitted,



Date: 7/10/11

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